IN THE CLAIMS:

The text of all pending claims, (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~strikethrough~~. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered).

1-10. (Cancelled)

11. (Currently Amended) A method of backing up data stored in a first virtual storage associated with a source physical storage into a backup medium, the source physical storage comprising a number of used blocks containing actual data and a number of unused blocks containing no actual data, the method comprising:

identifying the used blocks containing actual data in the source physical storage;

providing a second virtual storage associated with at least one physical storage, the second virtual storage being smaller than the first virtual storage and ~~equal to~~ having a size ~~of~~ corresponding to the number of used blocks containing actual data stored in the first virtual storage;

creating an address correspondence table between one or more block addresses of the actual data in the first virtual storage and sequential block addresses in the second virtual storage;

copying the actual data from the block addresses of the source physical storage to the sequential block addresses of the at least one physical storage in accordance with the created address correspondence tables; and

backing up all the actual data from the at least one physical storage to the backup medium by copying all the block addresses of the at least one physical storage ~~without checking~~ regardless of whether the block addresses of the at least one physical storage includes the actual data.

12. (Previously Presented) The method as claimed in claim 11, wherein the backing up all the actual data comprises recording the address correspondence tables and an address correspondence table between block addresses of the source physical storage and block addresses of the first virtual storage in the backup medium.

13. (Cancelled)

14. (Currently Amended) The method as claimed in claim 12, wherein the creating an address correspondence table comprises removing one ~~ore~~ or more unused block addresses of the source physical storage.

15. (Currently Amended) A virtual storage system for backing up data in a backup medium, comprising:

a first storage virtually storing data including actual data;

a source physical storage ~~physically storing data including actual data, wherein said source physical storage~~ associated with the first virtual storage, the source physical storage comprising a number of used blocks containing actual data and a number of unused blocks containing no actual data;

a second virtual storage virtually storing actual data copied from the first virtual storage, wherein said second virtual storage is associated with the first virtual storage, the second virtual storage being smaller than the first virtual storage and ~~equal to~~ having a size ~~of~~ corresponding to the number of used blocks containing actual data stored in the first virtual storage; and

at least one physical storage physically storing actual data copied from the source physical storage, wherein the physical storage is associated with the second virtual storage and the actual data is copied in accordance with an address correspondence table between one or more block addresses of the actual data in the first virtual storage and sequential block addresses in the second virtual storage, wherein

all the actual data is backed up from the physical storage to the backup medium by copying all the block addresses of the at least one physical storage ~~without checking~~ regardless of whether the block addresses of the at least one physical storage includes the actual data.

16. (Previously Presented) The virtual storage system as claimed in claim 15, wherein the backup medium further physically stores the address correspondence tables and an address correspondence table between block addresses of the source physical storage and block addresses of the first virtual storage.

17. (Cancelled)

18. (Previously Presented) The virtual storage system as claimed in claim 16, wherein the second address correspondence table is created by removing one or more unused block addresses of the source physical storage.

19. (Currently Amended) A computer-readable medium storing instructions to back up data stored in a first virtual storage associated with a source physical storage in a backup medium, the source physical storage comprising a number of used blocks containing actual data and a number of unused blocks containing no actual data, the instructions ~~which~~ when executed by one or more processors~~, cause~~ causes the one or more processors to execute the process comprising:

identifying the used blocks containing actual data in the source physical storage;

providing a second virtual storage associated with at least one physical storage, the second virtual storage being smaller than the first virtual storage and ~~equal to~~ having a size ~~of~~ corresponding to the number of used blocks containing actual data stored in the first virtual storage;

creating an address correspondence table between one or more block addresses of the actual data in the first virtual storage and sequential block addresses in the second virtual storage;

copying the actual data from the block addresses of the source physical storage to the sequential block addresses of the at least one physical storage in accordance with the created address correspondence tables; and

backing up all the actual data from the at least one physical storage to the backup medium by copying all the block addresses of the at least one physical storage ~~without checking~~ regardless of whether the block addresses of the at least one physical storage includes the actual data.

20. (Previously Presented) The computer-readable medium as claimed in claim 19, wherein the backing up all the actual data comprises recording the address correspondence tables and an address correspondence table between block addresses of the source physical storage and block addresses of the first virtual storage in the backup medium.

21. (Cancelled)

22. (Previously Presented) The computer-readable medium as claimed in claim 20, wherein the act of creating an address correspondence table comprises removing one or more unused block addresses of the source physical storage.